



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Patent Application of

KROHN et al.

Atty. Ref.: 36-1557

Serial No. 10/089,794

TC/A.U.: 2162

Filed: April 4, 2002

Examiner: LIANG, Gwen

For: INFORMATION ACCESS

April 27, 2007

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

Sir:

Applicant hereby appeals to the Board of Patent Appeals and Interferences from
the last decision of the Examiner.

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REAL PARTY IN INTEREST

The real party in interest is British Telecommunication public limited company, a corporation of the country of Great Britain.

RELATED APPEALS AND INTERFERENCES

The appellant, the undersigned, and the assignee are not aware of any related appeals, interferences, or judicial proceedings (past or present), which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

STATUS OF CLAIMS

Claims 1-16 are pending and have been finally rejected under 35 U.S.C. § 103 as being unpatentable over Liddy et al. (U.S. Patent No. 5,963,940) in view of Bowman et al. (WO Patent No. 99/45487). No claims have been substantively allowed and all rejected claims are being appealed.

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STATUS OF AMENDMENTS

No amendments have been filed since the date of the Final Rejection.

SUMMARY OF CLAIMED SUBJECT MATTER

The invention of the claims relates to an apparatus and method for accessing sets of information in an information system. Weightings are calculated which are indicative of the proportion of users who, upon using a search criterion, identified retrieved information as relevant. A listing of each independent claim, each dependent claim argued separately and each claim having means plus function language is provided below including exemplary reference(s) to page and line number(s) of the specification.

1. Apparatus for use in accessing sets of information stored in an information system, the apparatus comprising:

a computer having a user interface providing access to at least one information retrieval tool; [Fig. 1; pg. 6, line 23 to pg. 7, line 20]

a computer store for recording data relating to information retrieval by users; [Fig. 1; pg. 6, line 23 to pg. 7, line 20]

monitoring means operable, on receipt from a user at said user interface of one or more query terms for submission to said at least one information retrieval tool, to detect an indication by said user that a set of information identified by said at least one information retrieval tool using said received one or more query terms is relevant, and to record said received one or more query terms and an associated reference to said relevant set of information in said store; [Figs. 1-2; pg. 7, line 22 to pg. 9, line 27]

weighting means arranged to calculate, in respect of every set of information referenced in said store, a weighting for every query term recorded in association with said referenced set of information, said weighting being indicative of the proportion of users who, upon using the recorded query term with said at least one information retrieval tool, indicated that said associated referenced set of information was relevant; [Figs. 1-2; pg. 8, line 16 to pg. 9, line 27]

analysis means to identify a recorded query term for use with said at least one information retrieval tool, having, for each member of a group comprising one or more sets of information referenced in said store, a weighting in excess of a predetermined threshold; [Figs. 1-3; pg. 9, line 29 to pg. 17, line 5] and

means for providing an information retrieval tool search result output obtained by use of said identified query term. [Figs. 1-3, pg. 9, line 29 to pg. 17, line 5]

2. An apparatus as in Claim 1, wherein said monitoring means are arranged, in use, to detect said indication by said user wherein said indication comprises a request by said user to access a set of information identified by said at least one information retrieval tool. [Fig. 2; pg. 8, lines 3-15]

3. An apparatus as in Claim 1, wherein said analysis means are arranged to identify a recorded query term having, for each member of a first group comprising one or more sets of information selected by a user from those sets referenced in said store, a weighting in excess of said predetermined threshold. [Fig. 3; pg. 12, lines 6-18]

4. An apparatus as in claim 1, wherein said analysis means are further arranged to receive one or more query terms from said user interface, to identify a second group comprising one or more sets of information referenced in said store for which said received one or more query terms have a weighting in excess of said predetermined threshold, and to identify one or more further recorded query terms having, in respect of each member of said second group, a weighting in excess of said predetermined threshold. [Fig. 3; pg. 13, line 16 to pg. 14, line 29]

5. An apparatus as in claim 1, wherein said one or more query terms include words or word phrases and wherein said monitoring means are operable to record words from said one or more query terms in a stemmed form. [Fig. 3; pg. 14, line 30 to pg. 15, line 7]

6. An apparatus as in claim 1, wherein said analysis means include grouping means to identify one or more information categories represented by sets of information referenced in said store, to associate one or more of said referenced sets of information representative of the same information category, and wherein said analysis means are arranged to identify those recorded query terms having, for each of said associated sets of information, a weighting in excess of said predetermined threshold. [Fig. 3; pg. 12, line 15 to pg. 14, line 29]

7. A method of accessing sets of information stored in an information system, said method comprising:

(i) detecting submission by a user of a query term to an information retrieval tool, and a corresponding response from the retrieval tool; [Figs. 1-2; pg. 7, line 22 to pg. 9, line 27]

(ii) detecting an indication by the user as to the relevance of a set of information identified in the response from the retrieval tool; [Figs. 1-2; pg. 9, lines 7-18]

(iii) storing in a data store a reference to the set of information indicated as being relevant at (ii), and a record of the query term submitted by the user at (i); [Figs. 1-2; pg. 8, lines 3-15]

(iv) selecting one or more sets of information referenced in the data store; [Figs. 1-2; pg. 8, lines 16-33]

(v) calculating, for every selected set of information, a weighting associated with every query term, said weighting indicative of the proportion of users who, on submitting the query term to the information retrieval tool, identified the selected set of information and indicated that it was relevant; [Fig. 3; pg. 11, line 11 to pg. 12, line 5]

(vi) identifying weighted query terms from those calculated in (v) that exceed a predetermined threshold; [Fig. 3; pg. 12, line 6 to pg. 13, line 9] and

(vii) providing an information retrieval tool search result output obtained by use of said identified weighted query terms. [Fig. 3; pg. 13, lines 10-15]

8. A method as in Claim 7, wherein, at (iv), each said selected set of information is representative of the same category of information, and wherein the method includes:

(viii) using said identified one or more query terms from (v) to search for further sets of information in said category of information.

9. A method as in Claim 7, wherein, at (ii), said indication comprises accessing a set of information identified in the response from the retrieval tool.

10. A method as in Claim 9, wherein, at (ii), detecting said indication includes measuring the time spent by the user in accessing said set of information.

11. A method as in Claim 10, wherein, at (iv), said weighting is adjusted according to the measurements of time spent by users in accessing the respective selected set of information.

12. An apparatus as in Claim 1, wherein said group comprises at least one set of information representative of a particular category of information.

13. A computerized method for searching stored information using an information retrieval tool having a user-interface for input of a user-supplied query term, said method comprising:

for each and every item of stored information, maintaining a store of query terms previously used by plural users and individually weighted to represent the proportion of prior users who are considered to have found a respectively associated stored item of information to be relevant to a particular query term; and

providing an information retrieval tool output to a user of a user-input query term using said store of weighted query terms.

14. A method as in claim 13, wherein said weighted query terms represent a binary-valued thresholded determination.

15. A computerized apparatus for searching stored information using an information retrieval tool having a user-interface for input of user-supplied query terms, said apparatus comprising:

means for maintaining, for each and every item of stored information, a store of query terms previously used by plural users and individually weighted to represent the proportion of prior users who are considered to have found a respectively associated stored item of information to be relevant to a particular query term; and

means for providing an information retrieval tool output to a user of a user-input query term using said store of weighted query terms.

16. Apparatus as in claim 15, wherein said weighted query terms represent a binary-valued thresholded determination.

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(VI) GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1-16 are obvious under 35 U.S.C. § 103 over Liddy et al. in view of Bowman et al.

ARGUMENT

At page 4 of the Final Office Action, the Examiner admits that “Liddy does not expressly disclose selecting and calculating, for every selected set of information, a weighting associated with every query term, said weighting indicative of the portion of users who identified the selected set of information and indicated that it was relevant; identifying ... a weighting in excess of a predetermined threshold; providing ... output ... by use of said identified query term.” Appellants agree that Liddy does not teach these explicit features of its invention and, further, respectfully submit that neither does Bowman et al.

Indeed, the Examiner’s citation of references teaches nothing more than what is explained in the background portion of the specification at page 2, line 18 through page 3, line 5. The combination of references cited by the Examiner have the same deficiency as pointed out in the above cited portion of the specification wherein it is stated:

However, techniques such as that described above are limited to working with a set of documents actually retrieved. If the quality of information retrieved is poor, then post-retrieval analysis of that information is unlikely to be able to compensate, particularly when key information is simply not identified in the search.

Neither Bowman et al. nor Liddy et al. teach or suggest that “said weighting being indicative of the proportion of users who, upon using the recorded query term with said at least one information retrieval tool, indicated that said associated reference set of

information was relevant“ as expressly required in claim 1. Claim 1 has been reproduced below with the relevant limitation underlined.¹

1. Apparatus for use in accessing sets of information stored in an information system, the apparatus comprising:

a computer having a user interface providing access to at least one information retrieval tool;

a computer store for recording data relating to information retrieval by users;

monitoring means operable, on receipt from a user at said user interface of one or more query terms for submission to said at least one information retrieval tool, to detect an indication by said user that a set of information identified by said at least one information retrieval tool using said received one or more query terms is relevant, and to record said received one or more query terms and an associated reference to said relevant set of information in said store;

weighting means arranged to calculate, in respect of every set of information referenced in said store, a weighting for every query term recorded in association with said referenced set of information, said weighting being indicative of the proportion of users who, upon using the recorded query term with said at least one information retrieval tool, indicated that said associated referenced set of information was relevant;

analysis means to identify a recorded query term for use with said at least one information retrieval tool, having, for each member of a group comprising one or more sets of information referenced in said store, a weighting in excess of a predetermined threshold; and

means for providing an information retrieval tool search result output obtained by use of said identified query term. (Emphasis supplied.)

¹ The Examiner's statements at page 4 of the Final Office Action are concerned with the rejection of independent claim 7, but at page 8 of the Final Office Action the Examiner incorporates the same rejections against claim 1.

This is a key patentable distinction of Applicants' invention over the cited art. At page 4 of the Final Office Action, the Examiner alleges that Bowman does teach this feature of the invention and cites to Bowman at page 3, lines 6-9. But nowhere does the cited passage of Bowman indicate that users actually identify whether the reference set of information was relevant. Indeed, the portion cited by the Examiner states:

The scores in the rating table preferably reflect, for a particular item and term, how often users have selected the item when the item has been identified in query results produced for queries containing particular term."

This portion of Bowman et al. simply does not teach or even suggest Appellants' feature wherein "the proportion of users ... indicated that said associated reference set of information was relevant."

More particularly, the system incorporating the teachings of Bowman et al. that was created by the Examiner's combination of references simply counts the number of times certain information is retrieved in response to a query term, but nowhere does that system even contemplate that users would identify which pieces of retrieved information are actually relevant and then create weighting factors based on the users' actions. Thus, in the system of the combined references, faulty information could be retrieved multiple times leading to a high count that would lead other users to also retrieve the faulty information leading to an even higher count.

Appellants' inventions overcome this problem (which was prevalent in the prior art) by requiring users to indicate the relevance of retrieved information and creating a weighting indicative of the proportion of users that indicated the retrieved information was relevant. By definition "the proportion of users" means the number of users

indicating that the retrieved information was relevant divided by the total number of users who retrieved the information. It is noteworthy that the system based on the combination of references only contains the denominator of the proportion, i.e., it only counts the total users who retrieved the information. Thus, the references, taken singly or in combination, do not teach or suggest calculating the proportion of users who indicated that the retrieved information was relevant let alone a weighting based on such proportion. Accordingly, claim 1 is believed to clearly patentably define over the cited references taken either singly or in combination for this reason alone.

In addition, since independent claims 7, 13 and 15 also recite this same key feature, i.e., that a proportion of users identifying particular sets of retrieved information as relevant is used to create weightings, these claims are also believed to patentably define over the cited references.

CONCLUSION

In conclusion it is believed that the application is in clear condition for allowance; therefore, early reversal of the Final Rejection and passage of the subject application to issue are earnestly solicited.

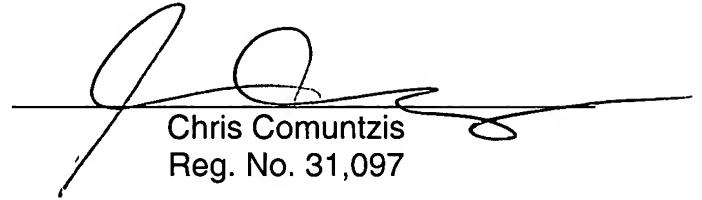
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Respectfully submitted,

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CLAIMS APPENDIX

1. Apparatus for use in accessing sets of information stored in an information system, the apparatus comprising:

a computer having a user interface providing access to at least one information retrieval tool;

a computer store for recording data relating to information retrieval by users;

monitoring means operable, on receipt from a user at said user interface of one or more query terms for submission to said at least one information retrieval tool, to detect an indication by said user that a set of information identified by said at least one information retrieval tool using said received one or more query terms is relevant, and to record said received one or more query terms and an associated reference to said relevant set of information in said store;

weighting means arranged to calculate, in respect of every set of information referenced in said store, a weighting for every query term recorded in association with said referenced set of information, said weighting being indicative of the proportion of users who, upon using the recorded query term with said at least one information retrieval tool, indicated that said associated referenced set of information was relevant;

analysis means to identify a recorded query term for use with said at least one information retrieval tool, having, for each member of a group comprising one or more sets of information referenced in said store, a weighting in excess of a predetermined threshold; and

means for providing an information retrieval tool search result output obtained by use of said identified query term.

2. An apparatus as in Claim 1, wherein said monitoring means are arranged, in use, to detect said indication by said user wherein said indication comprises a request by said user to access a set of information identified by said at least one information retrieval tool.

3. An apparatus as in Claim 1, wherein said analysis means are arranged to identify a recorded query term having, for each member of a first group comprising one or more sets of information selected by a user from those sets referenced in said store, a weighting in excess of said predetermined threshold.

4. An apparatus as in claim 1, wherein said analysis means are further arranged to receive one or more query terms from said user interface, to identify a second group comprising one or more sets of information referenced in said store for which said received one or more query terms have a weighting in excess of said predetermined threshold, and to identify one or more further recorded query terms having, in respect of each member of said second group, a weighting in excess of said predetermined threshold.

5. An apparatus as in claim 1, wherein said one or more query terms include words or word phrases and wherein said monitoring means are operable to record words from said one or more query terms in a stemmed form.

6. An apparatus as in claim 1, wherein said analysis means include grouping means to identify one or more information categories represented by sets of information

referenced in said store, to associate one or more of said referenced sets of information representative of the same information category, and wherein said analysis means are arranged to identify those recorded query terms having, for each of said associated sets of information, a weighting in excess of said predetermined threshold.

7. A method of accessing sets of information stored in an information system, said method comprising:

- (i) detecting submission by a user of a query term to an information retrieval tool, and a corresponding response from the retrieval tool;
- (ii) detecting an indication by the user as to the relevance of a set of information identified in the response from the retrieval tool;
- (iii) storing in a data store a reference to the set of information indicated as being relevant at (ii), and a record of the query term submitted by the user at (i);
- (iv) selecting one or more sets of information referenced in the data store;
- (v) calculating, for every selected set of information, a weighting associated with every query term, said weighting indicative of the proportion of users who, on submitting the query term to the information retrieval tool, identified the selected set of information and indicated that it was relevant;
- (vi) identifying weighted query terms from those calculated in (v) that exceed a predetermined threshold; and

(vii) providing an information retrieval tool search result output obtained by use of said identified weighted query terms.

8. A method as in Claim 7, wherein, at (iv), each said selected set of information is representative of the same category of information, and wherein the method includes:

(viii) using said identified one or more query terms from (v) to search for further sets of information in said category of information. [Fig. 3; pg. 13, line 16 to pg. 14, line 29]

9. A method as in Claim 7, wherein, at (ii), said indication comprises accessing a set of information identified in the response from the retrieval tool. [Fig. 3; pg. 8, lines 16-23]

10. A method as in Claim 9, wherein, at (ii), detecting said indication includes measuring the time spent by the user in accessing said set of information. [Fig. 3; pg. 9, lines 20-23; pg. 12, lines 1-4]

11. A method as in Claim 10, wherein, at (iv), said weighting is adjusted according to the measurements of time spent by users in accessing the respective selected set of information. [Fig. 3; pg. 9, lines 20-23; pg. 12, lines 4-5]

12. An apparatus as in Claim 1, wherein said group comprises at least one set of information representative of a particular category of information. [Figs. 1-3; pg. 13, line 16 to pg. 14, line 29]

13. A computerized method for searching stored information using an information retrieval tool having a user-interface for input of a user-supplied query term, said method comprising:

for each and every item of stored information, maintaining a store of query terms previously used by plural users and individually weighted to represent the proportion of prior users who are considered to have found a respectively associated stored item of information to be relevant to a particular query term; [Figs. 2-3; pg. 7, line 23 to pg. 15, line 9] and

providing an information retrieval tool output to a user of a user-input query term using said store of weighted query terms. [Figs. 2-3; pg. 7, line 23 to pg. 15, line 9]

14. A method as in claim 13, wherein said weighted query terms represent a binary-valued thresholded determination. [Fig. 3; pg. 12, line 15 to pg. 13, line 9]

15. A computerized apparatus for searching stored information using an information retrieval tool having a user-interface for input of user-supplied query terms, said apparatus comprising:

means for maintaining, for each and every item of stored information, a store of query terms previously used by plural users and individually weighted to represent the proportion of prior users who are considered to have found a respectively associated stored item of information to be relevant to a particular query term; [Figs. 1-3; pg. 6, line 23 to pg. 15, line 9] and

means for providing an information retrieval tool output to a user of a user-input query term using said store of weighted query terms. [Figs. 1-3; pg. 6, line 23 to pg. 15, line 9]

16. Apparatus as in claim 15, wherein said weighted query terms represent a binary-valued thresholded determination. [Fig. 3; pg. 12, line 15 to pg. 13, line 9]

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EVIDENCE APPENDIX

None.